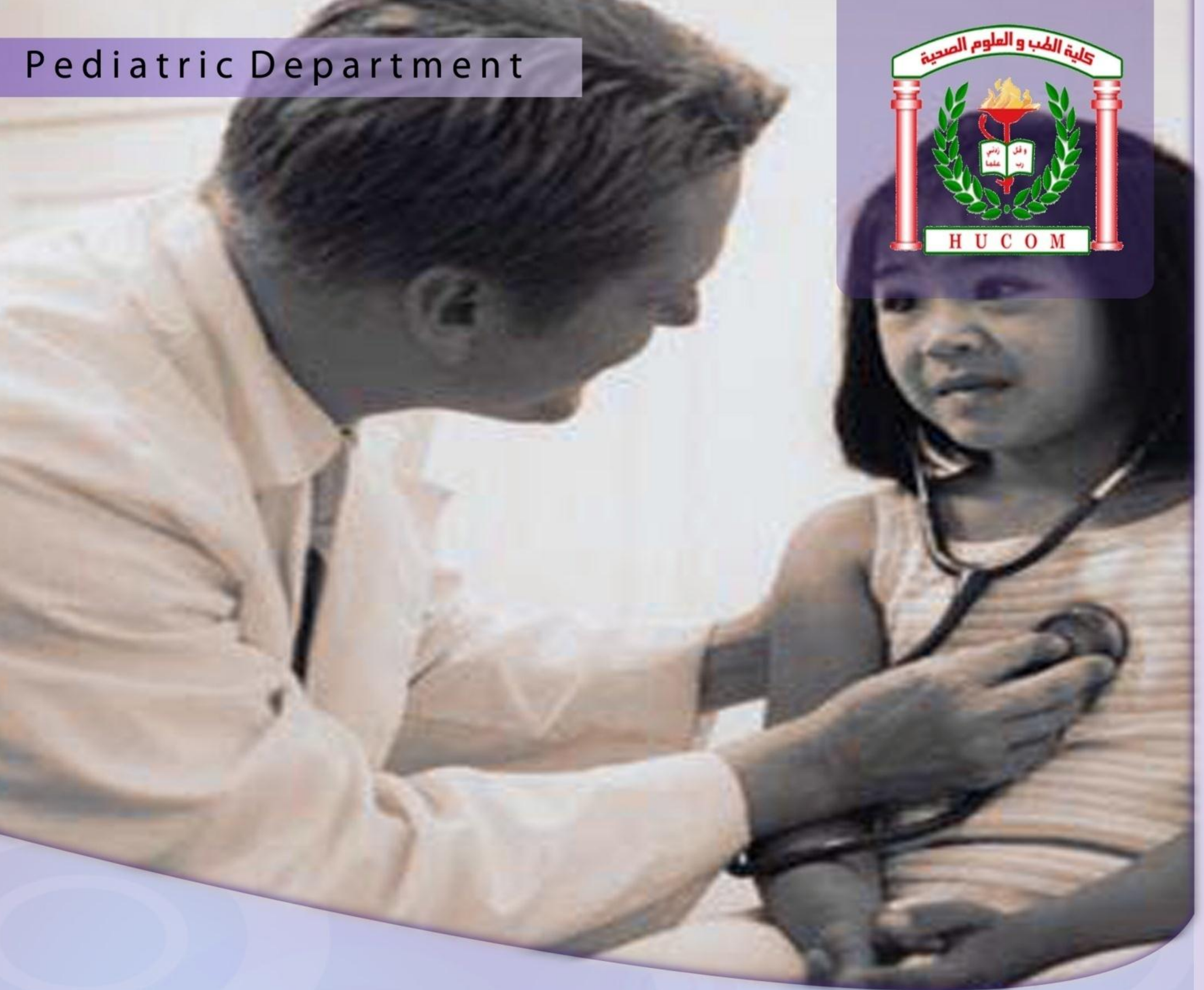
Pediatric Department



Case In Hospital

1

Collected By
Mona H.Batom

Supervised By
Dr.Salwa A.Bosaba'a

Mini Doctor



MEDIBOOK
LEARNING MADE EASY !
صفحة معلومات وكتب طبية
سجل إعجابك الآن
للمزيد من المعلومات والكتب والتلخيصات
الطبية والصيدلانية

بسم الله الرحمن الرحيم

Case in hospital

Part 1

Pediatric department

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Dr: salwa .A. bosaba,a

2012----2013

المقدمة

أولا أحببت أن أقول في مقدمتي نبذة عن هذا الكتيب الصغير

وهو عبارة عن تجميعة من المعلومات التي يسهل على الطالب حفظها وفهمها في نفس الوقت وهي مجمعة من عدة مصادر منها مواقع انترنت , كتب . مما شرح لي من الدكاترة في الكلية

وفكرتي كانت مبنية على تأليف أربعة أجزاء منه بنفس العنوان لكن الاجزاء تختلف فالجزء الأول أحببت أن يكون خاص بحالات قسم الأطفال حيث أنني عندما كنت ادرس فيه كل يوم اخذ حالة او حالتين اجمعهم على شكل أرواق احتفظ بهم .

وقد أتت الفكرة من خلال هذا القسم خاصة بعد امتحان قسم الأطفال النهائي حيث كنت آنذاك وقت الامتحان الدكاترة يسألوني أسئلة لم يكن لدي جوابا لها وأحسست بأنني انقص من المعلومات الكثير فقررت بعدها أن ابحث هنا و هناك عما كنت اجهله فقد وجدت لها بعد البحث إجابات وأحببت أن اجمعها بهذا الشكل في هذا الكتيب لكي يستفيد منها كل من يدرس في الطب

وقد واجهتني صعوبات في انجاز هذا العمل لم تكن كثيرة ولم توقفني عن إكماله ومنها ضيق الوقت ولكن بوجود الإصرار والعزيمة تتغلب على الصعوبات مهما كانت .

وفي النهاية أحببت أن أعلمكم انه لو كتب لنا عمر أطول في هذه الدنيا ونجح هذا الكتاب في النشر فترقبوا بعده بقية الأجزاء في قسم الباطنية والجراحة والنساء والولادة،،.

والله الموفق ،،،.

إهداء إلى

الشمعة المضيئة التي أنارت حياتي (أمي الغالية)

من به نورت حياتي طال الله بعمره العزيز على قلبي (الغالي أبي)

إلى من بهم نور دربي (إخوتي وأخواتي الكرام)

إلى من بالجسد وبالعلم حوتني بلادي الحبيبة اليمن

إلى من بهم حفزت وبهم تشجعت زملائي وزميلاتي بالكلية من الدفعة الثانية عشر

إلى من بالعلم سبقني ومن سيلحقني .....جميع طلاب وطالبات الطب بالكلية

شكر خاص

لمن تفضل بالإشراف والتعليق والمراجعة على محتواه

أخصائية الأطفال الدكتورة الفاضلة سلوى بوسبعه طال الله بعمرها

ولمن تفضل بالتصميم الأخ والزميل جاسم محمد الشعيب طال الله بعمره

وكذلك للأخ والزميل احمد عبدا لرحمن السقاف

Contents

Section 1

Respiratory system

Case 1

4month, male patient ,complaining of first episode of difficulty of breathing since 5days PTA and proceeded by low grade fever cough and rinorrhea on examination : there is a wheeze.

Most probable diagnosis: bronchiolitis

D/D: may be lower or upper respiratory tract infection

RESPIRATORY TRACT DISEASES

- ❑Laryngotracheobronchitis (Croup)
- ❑Epiglottitis
- ❑Foreign Body (FB) Aspiration
- ❑Subglottic Stenosis
- ❑Laryngomalacia

LOWER RESPIRATORY TRACT DISEASES

- ❑obstruction of airways below thoracic inlet, produces more expiratory symptoms
- ❑classic symptom: wheezing

Differential Diagnosis of Wheezing

- asthma: recurrent wheezing episodes
- pneumonia: fever, cough, malaise
- bronchiolitis: first episode of wheezing
- CF: prolonged wheezing unresponsive to therapy
- foreign body aspiration: sudden onset wheezing and coughing
- gastro esophageal reflux with aspiration: feeding difficulties
- congestive heart failure: associated FTT

Most common topic related to this case in hospital:

Bronchiolitis

- defined as the first episode of wheezing associated with URI and signs of respiratory distress
- common, affects 15% of children in first 2 years of life
- peak incidence at 6 months, often in late fall and winter
- occurs in children prone to airway reactivity, i.e. increased incidence of asthma.

Etiology

- respiratory syncytial virus (RSV) (75%).
- Parainfluenza, Influenza, Adenovirus

Clinical Features

- prodrome of URI with cough and fever.
- feeding difficulties, irritability.
- wheezing, respiratory distress, tachypnea, tachycardia, retractions, poor air entry.

Diagnosis:::

- CBC especially eosinophilia .
- CXR (only needed in severe disease, poor response to therapy,) .
  • air trapping, peribronchial thickening, atelectasis, increased linear markings.
- nasopharyngeal swab
  • direct detection of viral antigen (immunofluorescence).

Management

❑mild distress

- supportive: oral or IV hydration, antipyretics for fever.
- humidified O2 (maintain O2 sat>92%).
- inhaled bronchodilator (Ventolin) 0.03 cc in 3 ml NS by mask, used as trial only .

{1\2 cc +2cc n\s <2year \1cc+3cc n\s >2year}

q20 min, and then q1 hour – stop if no response.

❑moderate to severe distress

- as above.
- rarely, intubation and ventilation.
- Atrovent and steroids are not effective.
- consider ribavirin in high risk groups: BPD, CHD, congenital lung disease, immunodeficient.

❑monthly RSV Ig also offers some protection against severe disease to high risk groups.

- case fatality rate < 1%.

Indications of hospitalization

• hypoxia: O2 saturation < 92%.

• persistent resting tachypnea > 60/minute and retractions after several Ventolin masks.

• past history of chronic lung disease, hemodynamically significant cardiac disease, neuromuscular problem, immunocompromised.

• young infants < 3 months old (unless extremely mild).

• significant feeding problems.

• social problem, i.e. inadequate .

PNEUMONIA

Clinical Features

- ❑incidence is greatest in first year of life
- ❑fever, cough, crackles
- ❑tachypnea, tachycardia, respiratory distress
- ❑bacterial cause has more acute onset, but viral cause is more common
- ❑abnormal CXR

Etiology

. Common Causes of Pneumonia at Different Ages

Age Bacterial Viral Others.

-neonates GBS CMV Mycoplasma.

-E. Coli Herpes virus Urea plasma

-1-3 months S. aurous CMV, RSV Chlamydia trachomatis

-H. influenza virus Urea plasma

-S. pneumonia, Parainfluenza virus

-3 months - S. pneumoniae RSV TB

-5 years S. aureus Adenovirus

-H. influenzae Influenza virus

-> 5 years S. pneumoniae Influenza virus Mycoplasma pneumonia (most common)

-H. influenzae Chlamydia pneumonia

-TB

Management

Depended on age group of severity :

❑ the patient on combination (amoxicillin +third generation of cephalosporin in sever cases only >5year on erythromycin for mycoplasma pneumonias)

❑cause of staph. Aurous by ampiclox or cloxacillin.

❑supportive treatment: hydration, antipyretics, humidified O2.

❑IV or PO antibiotics.

- newborn .:
- ampicillin and gentamicin +/– erythromycin.
- 1-3 months:
- ampicillin +/– erythromycin.
- 3 months - 5 years:
- severe: IV ampicillin.
- mild: PO amoxicillin.
- > 5 years:
- erythromycin.

Asthma

❑ characterized by airway hyperactivity, bronchospasm and inflammation, reversible small airway obstruction.
❑ very common illness which presents most often in early childhood.
❑ associated with other atopic diseases such as allergic rhinitis or eczema.

Clinical feature

❑ **episodic bouts of:**

- wheezing
- cough: at night, early morning, with activity
- tachypnea
- dyspnea
- tachycardia

Triggers

❑ URI (viral or Mycoplasma)
❑ weather (cold exposure, humidity changes)
❑ allergens (pets), irritants (cigarette smoke)
❑ exercise, emotional stress
❑ drugs (aspirin, ß-blockers)

Classification

❑ **mild asthma**

- occasional attacks of wheezing or coughing (< 2 per week).
- symptoms respond quickly to inhaled bronchodilator.

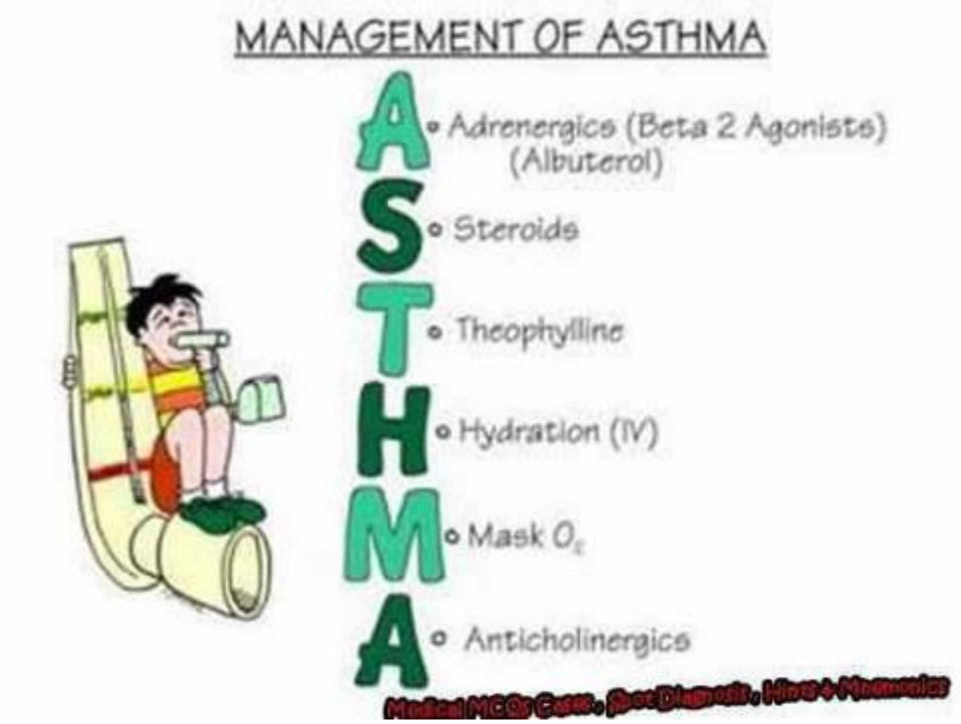
❑ **moderate asthma**

- more frequent episodes with symptoms persisting and chronic cough
- decreased exercise tolerance

❑ **severe asthma**

- daily and nocturnal symptoms
- frequent ER visits and hospitalization

Management



❑ **nutritional counseling:**

• high calorie diet .
• pancreatic enzyme replacements.
• fat soluble vitamin supplements.

❑ **management of chest disease:**

• physiotherapy, postural drainage.
• exercise.
• bronchodilators.
• antibiotics: depends on sputum C&S (e.g. cephalosporin, cloxacillin, ciprofloxacin, inhaled tobramycin).

N\B...prevention of asthma .....
to aviod the triggeror precipitating factors is the best in management .

Case 2

3year male patient from shabwa. his complaining of paroxysmal cough then vomiting after it.

Professional diagnosis;

Pertusis (whooping cough)

- ❑Bordetella pertussis
- ❑whooping cough, "100-day cough"
- ❑incubation: 6-20 days
- ❑infectivity: 1 week before paroxysms to 3 weeks after
- ❑decreased incidence due to immunizations
- ❑spread: highly contagious; airborne, transmitted via air droplets, released during intense coughing

Clinical Features

❑prodromal catarrhal stage

- 1-2 weeks, most contagious
- coryza, mild cough, low grade fever

❑paroxysmal stage

- 2-4 weeks
- paroxysms of cough, sometimes followed by inspiratory whoop (whoop may be absent in children < 6 months or adults)

❑infants may present with apnea

- +/– vomiting with coughing spells

❑onset of attacks precipitated by yawning, sneezing, eating, physical exertion

- can have severe symptoms for 6 weeks, cough for 6 months
- pressure effect - subconjunctival hemorrhage, rectal prolapse, hernias, epistaxis

❑convalescent stage

- 1-2 weeks, noninfectious
- occasional paroxysms of cough, but decreased frequency and severity

Diagnosis

- ❑ clinical: URTI symptoms followed by paroxysms of cough in an afebrile child
- ❑ lymphocytosis
- ❑ culture of nasopharyngeal swab or aspirate
- ❑ fluorescent antibody staining of pharyngeal specimen (most sensitive); PCR

Complications

❑ otitis media.

❑ respiratory:

- sinusitis
- secondary pneumonia, atelectasis.
- pneumomediastinum, pneumothorax, interstitial or subcutaneous emphysema secondary to ruptured alveoli.

❑ neurological:

- seizures
- encephalopathy (1:100,000)
- intracranial hemorrhage
- hypoxia during paroxysm leads to I.C hemorrhage ⇒ convulsion

Treatment

❑ supportive care

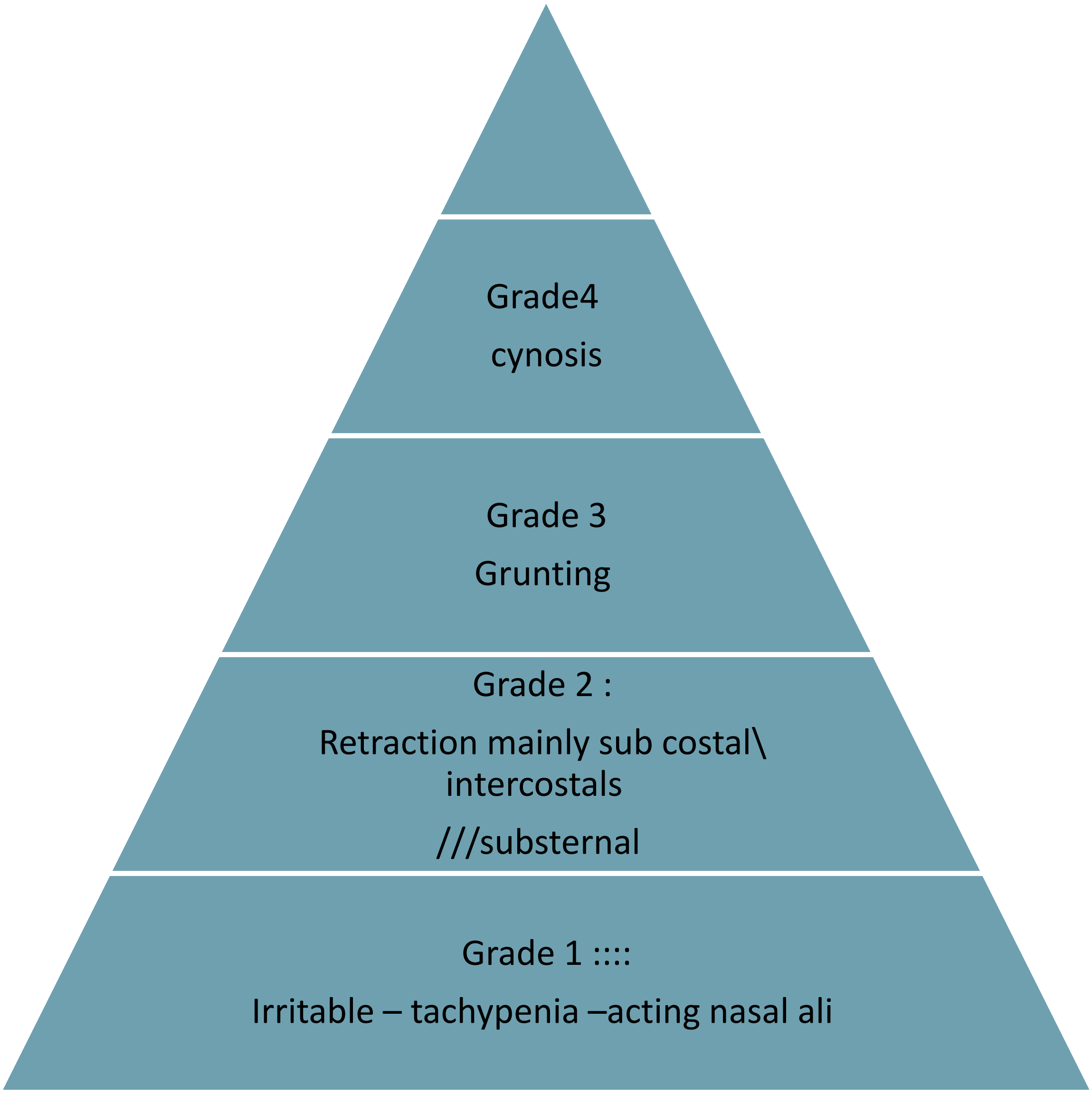
❑ hospitalize if paroxysms of cough are associated with cyanosis and/or apnea

❑ erythromycin x 14 days

- isolate until 5 days of treatment
- treatment will decrease infectivity but not change course
- shortens period of communicability

❑ chemoprophylaxis: erythromycin for all household contacts

Respiratory distress sign :



4grades"

Grade 1 "

Irritable *tachypenia*acting nasal ali.

Grade2

Retraction ⟹ sub costal +substernal due to increase intraplural Pressure.

Grade3 :

Grunting (expiratory sound due to air way resistance to closed glottis).

Grade 4

Cyanosis and may enter to shock and then death may occur .

Gastrology

Case3

female.4year from alsharaj. her complaining of diarrhea and vomiting since 5 days PTA .

Most probable diagnosis :: gastroenterit

VOMITING

❑History

• age of onset, duration, severity, type(projectile or not) ,time related to feeding or not…or early morning after awake.
• quality: bilious, bloody, regurgitation.
• associated symptoms (e.g. fever, abdominal pain, bowel movements, headaches).
• effect on growth and development, concurrent disease.

❑physical exam: tenderness, abdominal distention, masses.

❑assess hydration ❑investigations (based on history and physical exam).

• bloody emesis: investigate for causes of upper gastrointestinal (GI) bleed
• bilious emesis: rule out obstruction (upper GI series, U/S).
• regurgitation: evaluate for reflux (barium swallow with fluoroscopy, 24 hour esophageal pH probe).
• CBC, BUN, creatinine, ESR, venous blood gases …R.B.S ..increase in D.K.A and congenital adrenal hyperplasia .decreased in hypoglycemia and in pt with excessive uncontrolled vomiting as in gastroenteritis .
• urine, blood, stool C&S.
•serum electrolyte mainly serum K ,serum N, serum CL,serum Bicarbonate . acid –base –ph .
• amylase, lipase.
• abdominal x-ray, U/S, contrast radiology, endoscopy.

❑ Management

• treat underlying cause
• rehydration

Diarrhea

❑**History :**
-age, duration ,.
-Onset(acute ,chronic).
-Frequency
"<5 , severity…mild diarrhea .
5----9 times ,severity ……moderate diarrhea.
>9 times ,severity ………sever diarrhea.
-volume >>>when small volume ….suspected from large intestine.
But when large volume ….suspected from small intestine
-appearance : (blood or mucus in dysentery….. steatorheain malabsorption)
-Consistency ;(loose .in malabsorption …. Watery in viral gastroenteritis)
-foul from small intestine …not foal from large intestine.
- associated symptoms: ((fever ,tenesmus ,abdominal pain, abdominal pain ,constipation , nausea ,vomiting,………etc))
physical exam :asses sign of dehydration …. Growth parameter…systemic examination.

Gastroenteritis

Etiology

❑ **viral infection**
- **most common in Canada, e.g. Rotavirus**
- **associated with URTIs**
- **slight fever, malaise, vomiting, vague abdominal pain**
- **resolves in 3-7 days**

❑ **bacterial infection**
- **Salmonella, Campylobacter, Shigella, pathogenic E. coli, Yersinia**
- **more severe abdominal pain, high fever, bloody diarrhea**

❑ **parasitic infection**
- **Giardia lamblia, Endameba histolytica**

❑ **toxin-induced: staphylococcal food poisoning, C. difficile toxin**
❑ **allergic: food intolerance**
❑ **antibiotic-induced**
❑ **non-specific: associated with any non-GI infection, generalized sepsis or shock e.g.: in neuroblastoma due to release of vasoactive substance . in chronic inflammatory disease …ulcerative colitis**

Investigations

❑ history and physical examination critical to determine degree of dehydration.
❑ rectal exam for fecal consistency and for microscopy (leukocytes).
❑ stool for culture and sensitivity (C & S), ova and parasites (O & P), electron microscopy for viruses.
❑ if severe: routine blood work, blood and urine cultures renal function test ,S.electrolye ,acid base+PH.

Management

❑ prevention and treatment of dehydration is most important .
❑ replacement of fluid deficit + maintenance + ongoing losses .
❑ antibiotic therapy when indicated.
❑ oral rehydration therapy with frequent small volumes of pediatric oral rehydration solutions (e.g. Pedialyte 5-10ml\kg\motion).
❑ IV may be required for severe dehydration start with shock therapy (N\S or ringer lactate 20ml\kg\1hr <1year …20ml\kg\1\2hr >1year.
❑ early refeeding advisable.
❑ antidiarrheal medications must be avoided.

Complications

❑ dehydration
❑ electrolyte disturbances
• hyper or hyponatremia, hypokalemia, metabolic acidosis.
❑ secondary disaccharidase deficiency (post-infectious diarrhea) or allergy
• transient, due to villous damage leads to malabsorption syndrome as in G.lamblia..cow milk formula leads to celiac disease so avoid gluten containing diet for long life While in cause of post infection orally can give lactose free formula for a period of time .

Important topic :

Constipation

❑definition; refers to bowel movements that are infrequent and/or hard to pass. Constipation is a common cause of painful defecation. Severe constipation includes obstipation (failure to pass stools or gas) and fecal impaction.
❑as many as 20% of children < 5 years of age.

❑ Assessment

❑history
• age of onset, dietary history.
• associated symptoms: abdominal pain, encopresis, overflow diarrhea ,distension.
❑physical exam
• examine lower back for evidence of occult cord lesion (neural tube defect ((NTD)).
• abdominal exam, rectal exam
❑most often diet-related (functional constipation) with no specific disease.

Functional Constipation

❑99% of cases of constipation .
❑lack of bulk or fiber in diet or change in diet.
❑poor fluid intake.
❑infants: often when introducing cow's milk after breast milk.
❑toddlers/older children: can occur during toilet training, or due to pain on defecation as in anal fissure , stool withholding.

❑complications

• pain retention cycle: anal fissures and pain ⟹withholding passing stool —> chronic dilatation and overflow incontinence (encopresis).
❑treatment:
• adequate fluid intake (if < 6 months, 150 ml/kg/day).
• adequate dietary fiber, mineral oil, laxatives.
• appropriate toilet training technique.

ACUTE ABDOMINAL PAIN

Assessment

❑accurate description of pain and its characteristic…
-onset, acute as in inflammation or infection ….recurrent
-type ..localized … generalized …
-ch.ch of pain stapping,blunting, colicy.,
-time related to feeding ----day..night ,
-associated symptom as vomiting fever ,abdominal distension , intensity …mild…moderate..sever .

❑vomiting before pain suggests gastroenteritis ❑vomiting after pain suggests a surgical condition

❑physical examination: rebound tenderness, bowel sounds, rectal exam

❑labs

- CBC and differential.
- urinalysis to rule out urinary tract infection (UTI)

Differential Diagnosis

- GIT..gastroenteritis
- volvulus
- incarcerated hernia
- Henoch-SchönleinPurpura (HSP)
- UTI
- sickle cell crisis
- appendicitis
- pneumonia
- intussusceptions
- DKA
- malrotation
- mesenteric adenitis
- Meckle's diverticulum

Appendicitis

❑most common bowel disorder after 5 years of age

❑clinical features

- low grade fever, anorexia .
- nausea, vomiting (after onset of pain).
- abdominal pain (periumbilical —> RLQ), peritoneal signs.
- generalized peritonitis is a common presentation in infants/young children.

❑**treatment**: surgical

❑**complications**: perforation, abscess.

Intussusceptions

❑90% idiopathic, children with CF at significantly increased risk.

❑50% between 3 - 12 months, 75% before 2 years of age.

❑telescoping of segment of bowel into distal segment —> ischemia and necrosis

- usual site: ileocecal junction.

❑lead point may be swollen Peyer's patches, Meckel's diverticulum, polyp, malignancy, HSP

clinical features

• "classic triad"
1. abdominal pain
2. palpable sausage-shaped mass: upper to mid abdomen
3. "red currant jelly" stools (only in 10-15% of patients)
• sudden onset of recurrent, paroxysmal, severe periumbilical pain.
• pain-free remissions.
• later vomiting and rectal bleeding ("red currant jelly" stools).
• shock and dehydration.

❑diagnosis and treatment

• U/S
• air enema
• diagnostic: see reverse "E" sign
• therapeutic: reduce intussusception
• reduction under hydrostatic pressure
• surgery rarely needed

CHRONIC ABDOMINAL PAIN

❑10-15% of children
❑definition: = 3 episodes of pain severe enough to affect activities, occurring in a child >3 years of age over a period of 3 months.

Assessment

❑distinguish organic from non organic
❑history
• weight loss, appetite, energy, fever
• associated vomiting, diarrhea, constipation
• characteristics of pain
• psychosocial issues
❑physical exam: abnormalities suggest organic nature

❑red flags for organic etiology
• age < 5 years old • fever
• pain away from midline • anemia
• localized pain awakens child at night • travel history
• prominent vomiting, diarrhea • weight loss or failure to gain weight
• joint pain • rash
• rectal

Organic (< 10%)

❑chronic infection
❑gastrointestinal
• constipation (cause vs. effect)
• IBD, esophagitis, peptic ulcer disease, lactose intolerance
• anatomic anomalies, masses
• pancreatic, hepatobiliary
❑genitourinary disease
❑gynecological
❑cardiovascular
❑neoplastic

Functional/Recurrent Abdominal Pain (RAP) (90%)

❑school age, peak 8-10 years
❑prevalence: 10% of school children
❑F > M
❑characteristics
• vague, crampyperiumbilical or epigastric pain, vivid imagery to describe pain, clustering of episodes
• seldom awakens child from sleep
• aggravated by exercise, alleviated by rest
❑school avoidance
❑psychological factors related to onset and/or maintenance of pain
❑absence of organic illness
❑psychiatric comorbidity: anxiety, somatoform, mood, learning disorders, sexual abuse, eating disorders, elimination disorders
❑diagnosis
• exclude organic disorders (e.g. kidney disease, IBD)
• consider school phobia

❑investigations as indicated

• CBC, ESR, urinalysis, stools for O&P, C&S, occult blood

❑treatment

• continue to attend school
• manage any emotional or family problems
• trial of high fibre diet, trial of lactose-free diet
• reassurance

❑prognosis

• pain resolves in 30-50% of kids within 2-6 weeks of diagnosis
• 30-50% of kids with RAP have functional pain as adults (e.g. Irritable Bowel Syndrome)

ABDOMINAL MASS

-Benign Malignant
-Renal hydronephrosisnephroblastoma (Wilm's)
-polycystic kidney disease (PCKD) renal cell carcinoma (RCC)
-hamartoma
-Adrenal neuroblastoma
-Ovarian cysts ovarian tumours
-Other splenomegaly ,lymphoma
-pyloric stenosis retroperitoneal
-abdominal hernia rhabdomyoscarcoma
-teratoma

❑50% of abdominal masses in the newborn are renal in origin

DOWN SYNDROME (DS):

❑most common abnormality of autosomal chromosomes

❑trisomy 21

• 94% nondisjunction
• 5% translocations
• 1% mosaics (may be less noticeable/less severe)

Incidence

❑1 in 600-800 live births

❑rises with advanced maternal age to 1 in 20 by age 45 years

❑affected fetuses have increased risk of spontaneous abortion

Clinical Features

❑very wide range of severity
❑low IQ, developmental delay, short stature, obesity
❑shorter life expectancy
❑HEENT: flat occiput, 3rd fontanelle, microcephaly, small midface, small mandible and
maxillae, upslanting palpebral fissures, epicanthal folds, speckled iris (Brushfield spots), refractive errors and strabismus, furrowed
prominent tongue, high arched palate, ear anomalies low set , hearing problems
❑CVS: congenital cardiac defects (50%), particularly septal defects (AVSD)
❑GI: duodenal/esophageal/anal atresia, TE fistula, Hirschsprung disease, chronic constipation
❑MSK: lax joints including dysplastic hips, vertebral anomalies, atlantoaxial instability,
wide gap between 1st and 2nd toes
❑GU: cryptorchidism
❑CNS: hypotonia, onset of Alzheimer disease in 40's
❑DERMATOLOGY: Simian (palmar) crease, abnormal dermatoglyphics
❑HEMATOLOGY: 1% lifetime risk of leukemia… two type …AML with good response to chemotherapy or AAL with poor response
❑ENDOCRINE: hypothyroidism

D\D :
- hypotonia
-Delay psychomotor development

Management

❑mainly symptomatic
❑recommended testing
• ECHO, thyroid tests, atlanto-occipital x-ray at 2 and 12 years (controversial), hearing test,
ophthlamology assessment
❑early intervention programs to help children reach full potential

HEMATOLOGY

Case 4

12 year female patient , from foua, her known case of sickle cell anemia and complaining of recurrent episode of joint pain and fatigue since 10 days PTA . it start gradually in onset and progressive with time especially at lower limb and associated with yellowish discoloration of sclera .
On examination :on abdomen ….tenderness by superficial palpation
And enlarged spleen (splenomegaly) about 9cm below costal margin. by deep palpation
Professional diagnosis: vasooclusive and painful crisis
This case not sickle cell disease because the spleen must be not present due to ((outosplenoectomy by age of 5 year)) but this patient still with splenomegaly so the pt consider as a case of sickle – thalassemia)

ANEMIA

- ❑ **acute anemia: pallor, excessive sleepiness, irritability and poor feeding. In older children: SOB, decreased exercise tolerance, headache, fatigue, syncope**
- ❑ **chronic anemia: usually well tolerated**
- ❑ **maternal condition during pregnancy: maternal bleeding, pica, premature delivery (all suggestive of decreased Fe^{2+} stores in infants)**
- ❑ **maternal exposure to drugs or toxins: during pregnancy or breast-feeding**
- ❑ **diet history: milk excess —> iron deficiency anemia**
- ❑ **melena/hematochezia —> blood loss —> iron deficiency anemia**
- ❑ **family history of cholecystectomy or appendectomy —> hereditary hemolytic disorder**
- ❑ **ethnic origin —> thalassemia, sickle cell anemia**
- ❑ **exposure to oxidant drugs (sulpha drugs) —> G6PD deficiency**
- ❑ **underlying chronic illness (renal, hepatic, inflammatory, gastrointestinal)**
- ❑ **social history —> older housing/inner city —> lead poisoning**

Physical Exam

- ❑ **heart rate, blood pressure, orthostatic changes**
- ❑ **flow murmur, pallor, level of activity**

❑jaundice —> hemolysis
❑petechiae, purpura —> bleeding tendency
❑hepatomegaly, splenomegaly —> infiltrative disorder
❑failure to thrive —> chronic disease, organ failure
❑stool —> occult blood

D.D OF SYMPTOMS AND SIGNS OF ANEMIA :

Microcytic Normocytic

• iron deficiency
- blood loss or dietary lack
• thalassemia trait
• chronic disease
• sideroblastic anemia
• lead poisoning

IRON DEFICIENCY ANEMIA

❑microcytic, hypochromic anemia, decreased ferritin, decreased TIBC, marrow deplete of stainable Fe2+
❑most common cause of childhood anemia
❑full-term infants exhaust Fe2+ reserves by 5 months age, preterm infants have lower reserves – exhaust by 2-3 months of age
❑common diagnosis between 6 months – 3 years and 11 –17 years: periods of rapid growth and increased Fe2+ requirements
❑can cause irreversible effects on development if untreated mainly during infant eriod where CNS complete it developed …..<2year decrease IQ ,decrease learning and capacity).

Etiology

❑dietary
• vegan
• secondary to poor intake of iron-rich foods and gastrointestinal blood loss
• typically in bottle-fed infants (6-24 months) receiving large volumes of cow's milk
❑blood loss
• iatrogenic: repeated blood sampling (especially in neonates)
• cow's milk allergy: occult bleeding & protein-losing enteropathy secondary to inflammation enteropathy secondary to GI inflammation
low reticulocyte count

• bone marrow infiltration
• transient erythroblastopenia
of childhood
• chronic disease
• aplastic anemia…. Congenital …. Acquired
Macrocytic
• folic acid deficiency
• vitamin B12 deficiency
• hypothyroidism
• liver disease
high reticulocyte count
• blood loss (acute)
• hemolysis
a• extrinsic
- antibody-mediated
- fragmentation: DIC, HUS, prosthetic heart valve
b• intrinsic
- membrane disorders: spherocytosis
- enzyme deficiencies: G6PD
- hemoglobin disorders: sickle cell

Prevention

❑breast-fed infants: after 6 months, give iron-fortified cereals and iron-rich foods
❑non-breast fed infants: give iron-fortified formula from birth
❑premature infants: start iron supplements at 6-8 weeks of age and continue until 1 year old

Management

❑determine cause
❑encourage diverse, balanced diet
❑oral iron therapy – ferrous sulfate 6mg/kg/day BID-TID for 3 months
Response to iron therapy indicated by :
1• improvement of apatite and decrease imtasility by first few 13 days or within hr
2• increased reticulocyte count in 48-72 hours
3• increased hemoglobin in 4days … one week up to one month
4• repletion of iron stores in 1-3 months
❑poor response to oral Fe2+ therapy: non-ompliance, ongoing blood loss,

Dose insufficient or duration of therapy, high gastric pH, incorrect diagnosis

. ANEMIA OF CHRONIC DISEASE

❑ most often normocytic, normochromic (microcytic, hypochromic may occur with chronic infection/malignancy
❑ multi-factorial in origin
❑ chronic inflammatory states including juvenil rheumatoid arthritis (JRA), chronic infections,
chronic renal failure, and malignancies
❑ iron stores are variable and ferritin levels are unreliable (acute phase reactant)
therefore bone marrow assessment may be necessary for diagnosis
❑ treatment with erythropoeitin helpful in some cases (renal disease)

SICKLE CELL DISEASE

clinical complications (most severe is SS, least severe SD)
Pathophysiology
❑ red blood cells sickle with low pO2, dehydration, fever, acidosis
❑ acute intravascular sickling results in infarction of tissue
❑ hemolysis causes chronic, well-compensated anemia (Hb 60-90 g/L)
❑ increased incidence in Blacks and Mediterraneans
Presentation
❑ trait: asymptomatic ± microscopic hematuria
❑ disease: after 10-12 weeks with fall in fetal Hb, anemia, jaundice, splenomegaly

Types of Crises

…vaso--occlusive ….sequestration ….a plastic ….hyper hemolyticmainly in pt with G6P12
❑ vaso-occlusive crisis
• most common hallmark of disease
• due to obstrution of blood vessels by rigid, sickled cells —> tissue hypoxia —> cell death; presents as PAIN and fever
• in any organ; most commonly in long bones of arms and legs, chest, abdomen, CNS (stroke), dactylitis (in young children)
❑ aplastic crisis
• depression of erythropoiesis, generally associated with infection (Parvovirus B19)

❑splenic sequestration
• sudden massive pooling of red cells in spleen, acute fall in hemoglobin, shock (increased reticulocyte count, decreased Hb)
Functional Asplenia
❑splenic dysfunction usually by 5 years secondary to autoinfarction
❑susceptible to infection by encapsulated organisms (especially S. pneumoniae)
❑requires prophylactic antibiotics, pneumococcal vaccine, and immediate evaluation of fever
Other Manifestations
❑growth delay, bony abnormalities, a vascular necrosis (AVN) of femoral head, priapism
(often results in permanent impotence in adults), stones in gallbladder
❑acute chest crisis: fever, chest pain, increased WBC count, pulmonary infiltrates….where it reciitated by infection leads to pneumonia or infarction in bone leads to fat embolism

Management

❑**acute**• supportive and symptomatic
• fluids (1 1/2 maintenance), analgesia, exchange/straight transfusions, antibiotics
• O2 if respiratory distress or chest crisis, incentive spirometry

❑**chronic**
• early aggressive treatment of infections, prophylactic antibiotics (daily oral penicillin)
• pneumococcal, meningococcal, Hepatitis B, HIb and influenza vaccines
• folate supplementation if macrocytic
• hydroxyurea if have frequent crises
• chronic transfusion program if history of stroke or splenic sequestration
• genetic counseling and education

Complication of sicle cell disease :

-acute-chronic crisis
-priapism
-infection e.g. >>pneumonia
-osteomylitis
-sequestration
-congenital heart failiure
-stroke(CNS)

UROLOGY

Case 5

5year male patient complaining of red urine WITH protenuria since 2 day
Most probable diagnosis:

Nephrotic syndrome

Nephrotic syndrome is a nonspecific disorder in which the kidneys are damaged, causing them to leak large amounts of protein (proteinuria at least 3.5 grams per day per 1.73m^2 body surface area) from the blood into the urine.

Signs and symptoms :

-The most common sign is excess fluid in the body due to the serum hypoalbuminemia. Lower serum oncotic pressure causes fluid to accumulate in the interstitial tissues. Sodium and water retention aggravate the edema. This may take several FORMS '

- **Puffiness around the eyes, characteristically in the morning.**
- **Pitting edema over the legs.**
- **Fluid in the pleural cavity causing pleural effusion. More commonly associated with excess fluid is pulmonary edema.**
- **Fluid in the peritoneal cavity causing ascites.**
- **Generalized edema throughout the body known as anasarca**

- **Most of the patients are normotensive but hypertension (rarely) may also occur.**
- **Anemia (iron resistant microcytic hypochromic type) maybe present due to transferrin loss.**
- **Dyspnea maybe present due to pleural effusion or due to diaphragmatic compression with ascites.**
- **Erythrocyte sedimentation rate is increased due to increased fibrinogen & other plasma contents.**
- **Some patients may notice foamy or frothy urine, due to a lowering of the surface tension by the severe proteinuria. Actual urinary complaints such as hematuria or oliguria are uncommon, though these are seen commonly in nephritic syndrome.**
- **May have features of the underlying cause, such as the rash associated with systemic lupus erythematosus, or the neuropathy associated with diabetes.**
- **Examination should also exclude other causes of gross edema—especially**

the cardiovascular and hepatic system.

N/B:-nephrotic syndrome characterized by…. Heavy protinuria….hypoprotenimia mainly albumin…..hyperchlosteremia ….anasarca

N.B….D/D of edema :

Renal cause …..renal failure or nephritic syndrome

Cardiac cause ….congenital heart failure

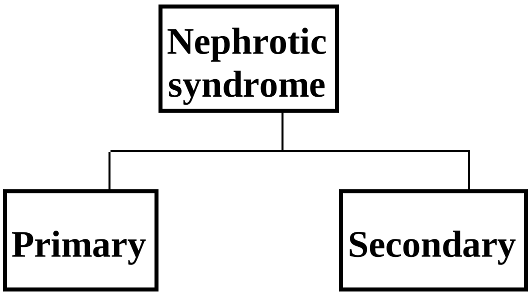
Allergic cause ……angioodema

Nutritional ……kwashiorkor

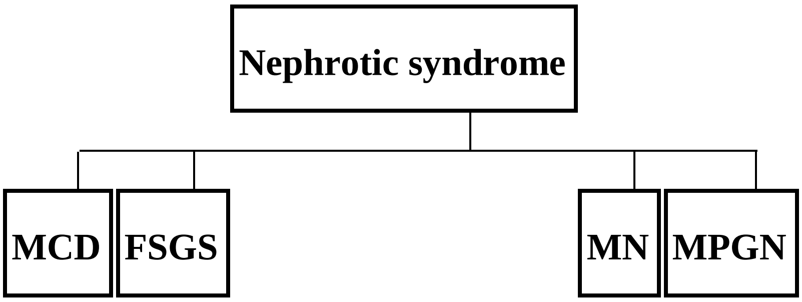
Lymphatic cause

Classification

A broad classification of nephrotic syndrome based on underlying cause:



Nephrotic syndrome is often classified histologically:



N.B….MCD(Minimal change disease) …FSGS(Focal segmental glomerulosclerosis) …..MN(Membranous glomerulonephritis) MPGN(Membranoproliferative glomerulonephritis)

essential investigations for nephrotic syndrome ::

- **24 hour bedside urinary total protein estimation.**

Urine sample shows proteinuria (>3.5 g per 1.73 m^2 per 24 hours). It is also examined for urinary casts, which are more a feature of active nephritis.

- **Comprehensive metabolic panel (CMP) shows hypoalbuminemia: albumin level ≤2.5 g/dL (normal=3.5-5 g/dL).**
- **Lipid profile.**

High levels of cholesterol (hypercholesterolemia), specifically elevated LDL, usually with concomitantly elevated VLDL is typical.

- **Electrolytes, urea and creatinine (EUCs): to evaluate renal function.**

Further investigations are indicated if the cause is not clear:

- **Biopsy of kidney for frequent relapsing ….other nephritic not(MCNC)**
- **Auto-immune markers (ANA, ASOT, C3, cryoglobulins, serum protien).**
- **Ultrasound of the whole abdomen.**

CARDIOLOGY

CASE 6

9month, female patient from wadiamed, is suspected down syndrome her complaining of DOB since 6days PTA
On examination ………by general has all sign of dysmorphic(see above) by specific :::on cardiac examination ….there is pan systolic murmur

Most probable diagnosis : congenital heart disease

HEART MURMURS:

Physiological murmur	**history and physical asymptomatic timing systolic ejection murmur (except venous hum)** **Grade<2.** Not radiated ….no trill …. Change with position (listen while sleep but disappear while sitting . **Splitting; physiologic S2** …X-ray … ECG ...ECHO normal .	Normal Sound ….no heart failure No sign of respiratory sign
Pathological murmur	**history and physical: symptoms and signs of cardiac disease.** **timing: all diastolic,.** **pansystolic or continuous.** **grade>2** with thrill. **splitting: fixed splitting or** single s2. **extra sounds/clicks …present.** **change of position** .. unchanged . divided in 2 part : 1-cynotic congenital heart disease. 20 % most common .. TOF+ TOG. 2 –acynotic congenital heart disease most common 80% these divided to : _Septal ..VSD,ASD,A.V channel(left to right shunt) Valvular …pulmonary stenosis…aortic coarction -tubular : PDA(left to right shunt) @ TOF(teratology of fallotwith low pulmonary blood flow@ TOG(transposition of great arteries with high pulmonary blood flow …. G.H.F)	Abnormal sound ….with heart failure and sign of respiratory distress>… divided in 2 part : 1-cynotic congenital heart disease 20 % 2 –acynotic congenital heart disease 80%

(

Differences between cyanotic and acynotic congenital heart disease

cynotic congenital heart disease	Less common 20%	Associated with cyanosis and variable	More serious because the most cases of cyanotic appear asymptomatic leads delay in corrective surgery performed	corrective surgery is performed in symptomatic patient
acynotic congenital heart disease	More common 80%	Not associated with cyanosis or rare	Less Serious	....

CONGESTIVE HEART FAILURE

Etiolog
--

- ❑congenital heart defects (CHD)
- ❑arteriovenous malformations (AVM's)
- ❑cardiomyopathy
- ❑arrhythmias
- ❑acute hypertension
- ❑anemia
- ❑corpulmonale
- ❑myocarditis

Symptoms of heart failure :

❑infant: feeding difficulties, easy fatiguability, exertional dyspnea, diaphoresis when sleeping
or eating, respiratory distress, vomiting, lethargy, cyanosis
❑child: decreased exercise tolerance, fatigue, decreased appetite, failure to thrive, respiratory distress, syncope,
❑orthopnea, paroxysmal nocturnal dyspnea, edema are all uncommon in children.

Physical Findings in heart failure patient:

❑four key features:
(2 tachy's, 2 megaly's)
tachycardia, tachypnea, cardiomegaly, hepatomegaly
❑failure to thrive (FTT)
❑respiratory distress, gallop rhythm, wheezing, crackles, cyanosis, clubbing (with CHD)
❑alterations in peripheral pulses, four limb blood pressures
❑dysmorphic features associated with congenital syndromes

Management

- correction of underlying cause
- general: sitting up, O2, sodium and water restriction, increased caloric intake
- pharmacologic: diuretics, inotropic agents, afterload reduction

Fever

(also known as pyrexia) is a commonCONGESTIVE HEART FAILUREmedical sign characterized by an elevation of body temperature above the normal range of 36.5–37.5 °C (98–100 °F) due to an increase in the temperature regulatory set-point. This increase in set-point triggers increased muscle tone and shivering.

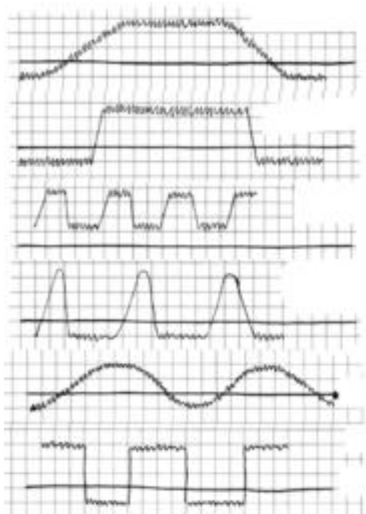
Fever differs from uncontrolled hyperthermia, in that hyperthermia is an increase in body temperature over the body's thermoregulatory set-point, due to excessive heat production and/or insufficient thermoregulation.

Temperature Classification

Hypothermia	<35.0 °C (95.0 °F
Normal	36.5–37.5 °C (97.7–99.5 °F)
Fever	>37.5–38.3 °C (99.5–100.9 °F)
Hyperthermia	>37.5–38.3 °C (99.5–100.9 °F)
Hyperpyrexia	>40.0–41.5 °C (104–106.7 °F)

Note: The difference between fever and hyperthermia is the mechanism.

Types



Performance of the various types of fever
a) Fever continues
b) Fever continues to abrupt onset and remission
c) Fever remittent
d) Intermittent fever
e) Undulant fever
f) Relapsing fever

diagnosis:

- **Continuous fever: Temperature remains above normal throughout the day and does not fluctuate more than 1 °C in 24 hours, *e.g.*lobar pneumonia, typhoid, urinary tract infection, brucellosis, or typhus. Typhoid fever may show a specific fever pattern (*Wunderlich curve* of typhoid fever), with a slow stepwise increase and a high plateau. (Drops due to fever-reducing drugs are excluded.)**
- **Intermittent fever: The temperature elevation is present only for a certain period, later cycling back to normal, *e.g.*malaria, kala-azar, pyaemia, or septicemia. Following are its types :0**
  - **Quotidian fever, with a periodicity of 24 hours, typical of *Plasmodium falciparum***
  - **Tertian fever (48 hour periodicity), typical of *Plasmodium vivax* and**

Plasmodium ovale

- **Quartan fever (72 hour periodicity), typical of _Plasmodium malariae_.**

- **Remittent fever: Temperature remains above normal throughout the day and fluctuates more than 1 °C in 24 hours, _e.g._, infective endocarditis.**
- **Pel-Ebstein fever: A specific kind of fever associated with Hodgkin's lymphoma, being high for one week and low for the next week and so on. However, there is some debate as to whether this pattern truly exists.**

A neutropenic fever, also called febrile neutropenia, is a fever in the absence of normal immune system function. Because of the lack of infection-fighting neutrophils, a bacterial infection can spread rapidly; this fever is, therefore, usually considered to require urgent medical attention. This kind of fever is more commonly seen in people receiving immune-suppressing chemotherapy than in apparently healthy people.

Febricula is an old term for a low-grade fever, especially if the cause is unknown, no other symptoms are present, and the patient recovers fully in less than a week.

Pictures related to case in hospital

Picture of case presented in hospital

Respiratory problems

1- Bronchial asthma x-------ray :



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Description of it:

Mediastinal air is noted adjacent to the anteroposterior window and air trapping extends to the neck, especially on the right side.

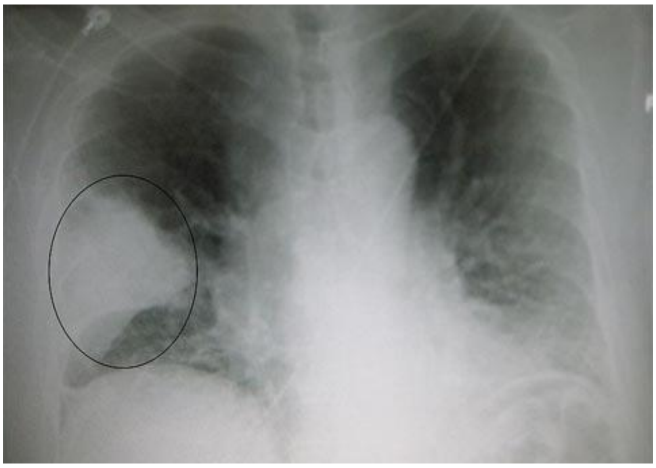
2- pneumonia …x-ray



Description of it :

There is ill defined opacity in middle zone of right lung

3- bacterial pneumonia…x-ray



Description of it :

There is prominent wedge shaped on middle zone of right sided of the lung.

4- plural effusion …x-ray



Description of it :

There is homogenous opacity on middle and lower zone of right side of the lung may be due to pneumonia or lung cancer.

Gastric problems

Intussusception x-ray



Description of it :**This is the picture of her abdominal X ray which shows small bowel dilatation (as evidence of central position and valvulae) and thickening of the bowel wall at right lower quadrant.**

2-peristalsis wave :

from LHQ to RHQ in pyloric stenosis.



3- down syndrome pictures

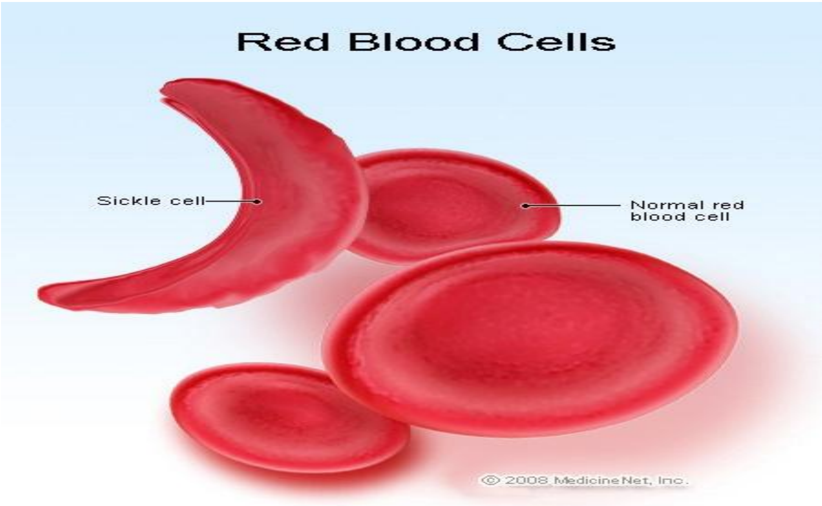
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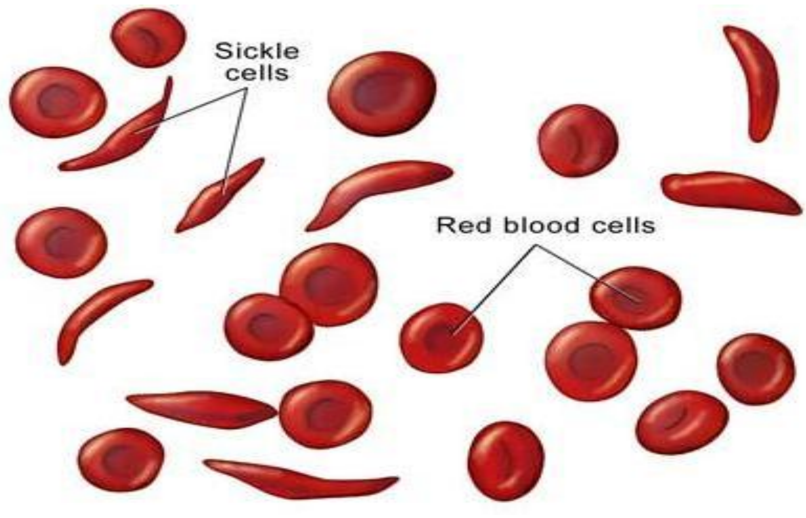




Hematology problem :

Sickle cell anemia





Urology problem :

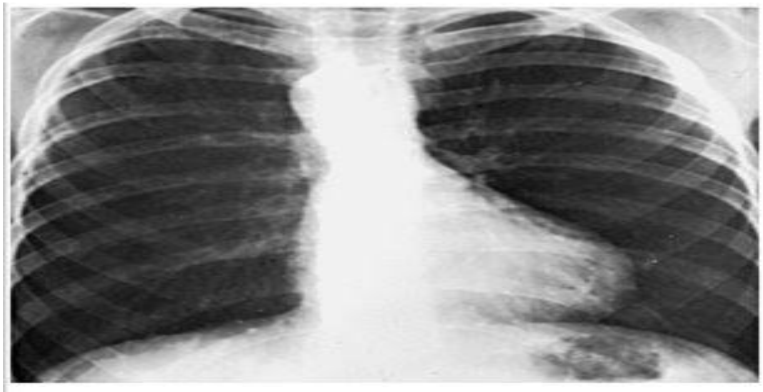
Nephrotic syndrome



Description of it :

Per orbital swelling.

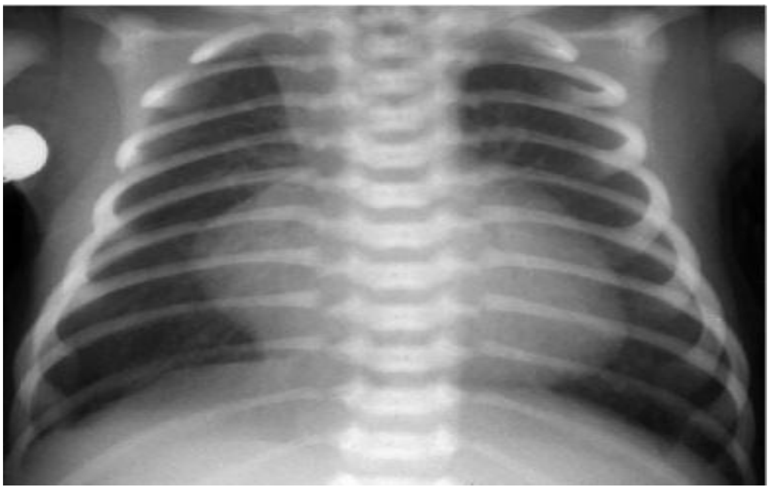
Cardiology :



Tetralogy of Fallot

is one of the conotruncal family of heart lesions in which the primary defect is an anterior deviation of the infundibular septum (the muscular septum that separates the aortic and pulmonary outflows). The consequences of this deviation are (1) obstruction to right ventricular outflow (pulmonary stenosis), (2) ventricular septal defect (VSD), (3) dextroposition of the aorta with override of the ventricular septum, and (4) right ventricular hypertrophy. Obstruction to pulmonary arterial blood flow is usually at both the right ventricular infundibulum (subpulmonic area) and the pulmonary valve. The main pulmonary artery is often small, and various degrees of branch pulmonary artery stenosis may be present. Complete obstruction of right ventricular outflow (pulmonary atresia with VSD) is classified as an extreme form of tetralogy of Fallot . The degree of pulmonary outflow obstruction varies, with the severity of the obstruction determining the degree of the patient's cyanosis.

2- transposition of great arteries



Egg-on-a-String Sign-narrowing of superior mediastinum and globular shape of heart in neonates with Transposition of the Great Arteries.

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6-some information of these taked from doctors in round in our hospital.

Abbreviations:

PTA : pretime of admission
CF :cystic fibrosis
FTT: failure to thrive
URTI: upper respiratory tract infection
CXR : chest X-ray
CBC: complete blood count
IV: intravenous
CHD : coginital heart disease
CMV: cytomegalovirus
PO: per oral
ER: emergency room
I.C hemorrhage: intracranial hemorrhage
GI: gastro intestinal
D.k.A: diabetic ketoacidosis
R B S: random blood sugar
BUN: blood urea nitrogen]
Pt: patient
U\S: ultrasound
UTI: urinary tract infection
RLT: right lower quartant
IBD: irritable bowel disease
F female
M male
ESR : erythrocyte sedimentation rate
TE: trachoesophagial
GU:genitourinary
ALL: Acute lymphoblastic leukemia
AML: acute myeliod leukemia
G6PD: glucose 6 phosphate deficiency
TID: three time per day
BIDP two time per day
CNS : central nervous system
SS : sickle syndrome
SD : sickle disease
HUS: haemolytic-uraemic syndrome
]DIC: disseminated intravascular coagulopathy
BPd: Bronchopulmonary Dysplasia